

# Honeywell 1978

AR27



# HONEYWELL LIMITED / ANNUAL REPORT 1978

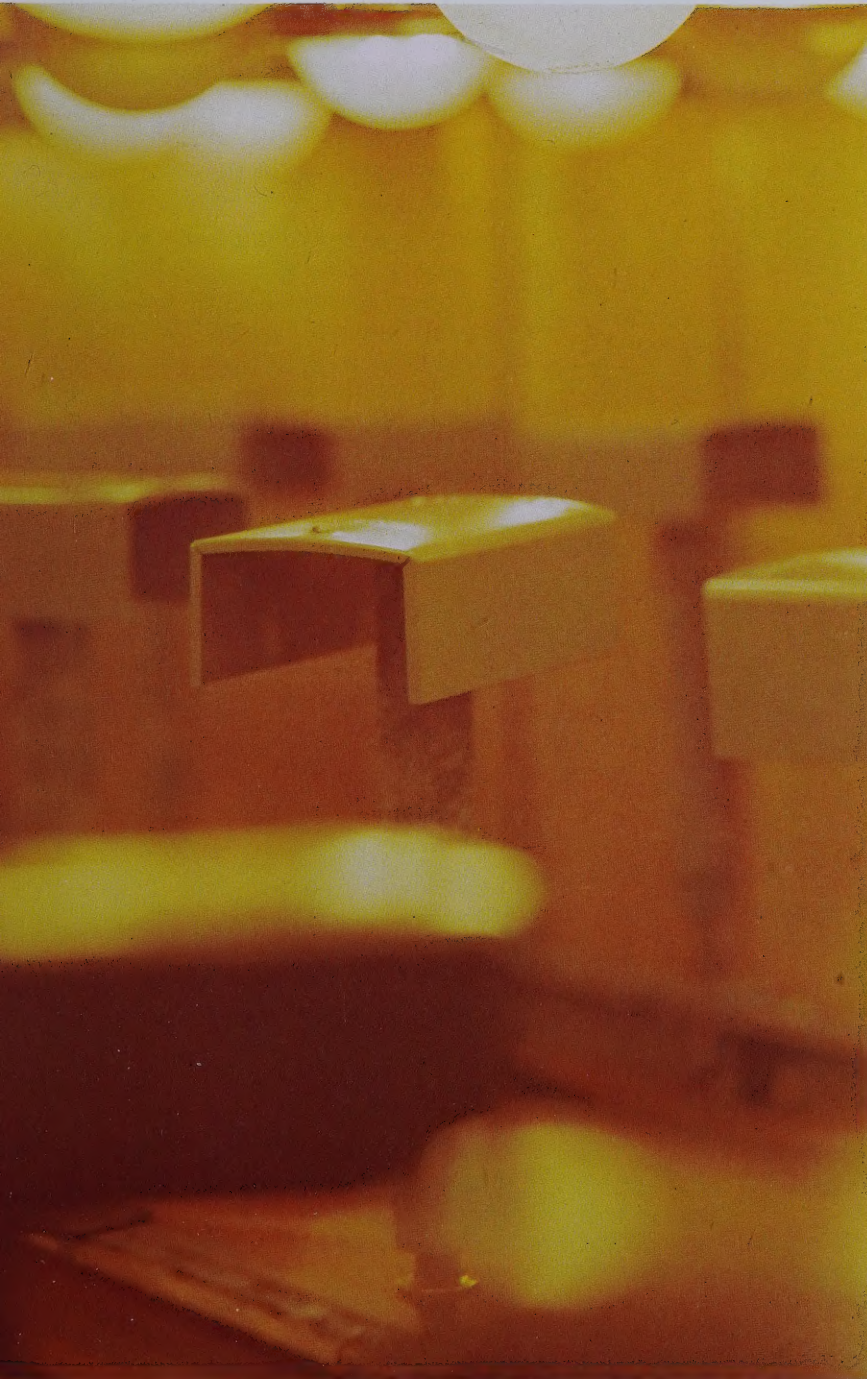
**Cover:** MICRO SWITCH division's keyboard modular assembly area in main Scarborough plant. Shown is a Canadian-developed keyboard used in word processing systems for the world market.

**Left:** Electronic Bach coil winder in main plant produces 500 copper coils an hour for transformers, relays.

**Right:** Electrostatically painting metal components in baking oven at Scarborough plant.

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## The Nature of our Business

Honeywell is a world leader in the business of management controls, ranging from complex computer systems for managing a business or automating an entire industrial process, to control systems for the total management of building environments of all types, or making possible exploration of outer space and under the sea.

The six operating divisions of Honeywell Limited:

**Information Systems** — markets a complete range of general purpose information processing computers, from minicomputers to large scale central processors, along with related software and peripheral equipment.

**Residential** — markets electric and electronic controls for heating, ventilating and air conditioning; also flame safeguard controls; load management systems; electronic air cleaners; oil, gas and electric heating controls; smoke detectors and thermostats.

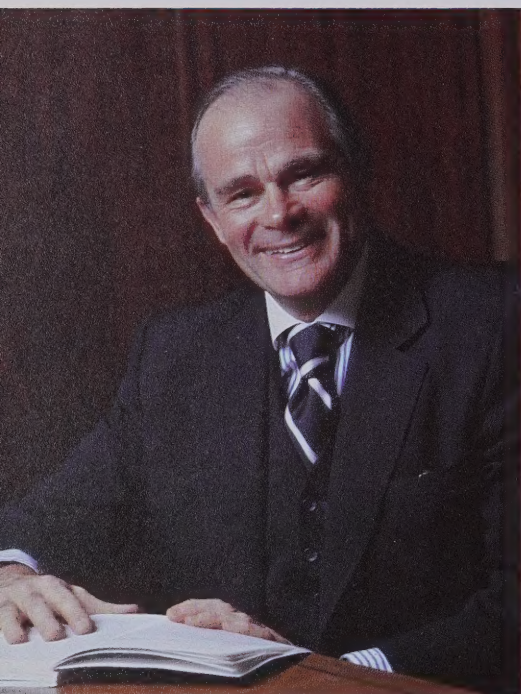
**Commercial** — markets computer-controlled building automation and energy management systems; fire alarm and security systems, lighting control systems, and environmental heating, ventilating and air conditioning control systems for commercial, institutional and industrial buildings; also offers supportive service and maintenance contracts.

**Industrial** — markets electronic control systems and related engineering services for process industries; maintenance contract sales for servicing analog and digital instrumentation; burner control systems; test instruments for research and biomedical applications; avionics equipment maintenance.

**MICRO SWITCH** — markets the most extensive line of precision switches and controls in the world for manufacturing, material handling and automotive applications; also manufactures solid state keyboards, high performance DC motors and solid state switches for computer and other applications.

**Amplitrol Electronics** — designs, manufactures, installs and services electronic security alarm systems for financial institutions and for commercial, industrial and retail applications; also provides 24-hour monitoring of alarms from 14 secured stations in major Canadian metropolitan centres.

Honeywell Limited, incorporated under a federal charter in 1930, is the Canadian subsidiary of the worldwide parent company, Honeywell, Inc., Minneapolis, Minnesota.



R. J. Bilodeau  
Chairman and Chief Executive Officer

While the economy showed some improvement in 1978, there were still present the very real concerns of inflation, high unemployment and a depressed Canadian dollar.

We are, however, fully confident of the future for Canada and found it appropriate in 1978 to take advantage of opportunities to invest in new marketing ventures.

I am pleased to report that Honeywell Limited had a successful year and enters 1979 with a higher than normal order backlog.

Stimulated by continuing growth in exports, our consolidated sales last year were the highest ever, climbing to \$178 million, up nearly 14 per cent over 1977 volume of \$156.4 million. Consolidated net earnings last year were \$11.8 million, up 11 per cent over 1977.

This strong performance reflected the good management that exists at all levels of the organization. One of the underlying strengths of an internationally-oriented company, such as ours, must be its ability to compete in both product quality and price. I would like to thank all Honeywell employees for the great contribution they have made to these objectives in 1978.

Significant to our progress and future growth is the leadership position Honeywell has earned in the marketplace: for control systems that clearly offer purchasers a return on investment in respect to reducing energy costs in the operation of all types of building structures; the product leadership that our TDC 2000 microprocessor-based industrial process control system has established in Canada; and the continuing expansion of our installed general purpose computer base.

We are also realizing growing benefits from our expanding level of activity in new product application research. In 1978 we invested some \$700,000 in this area. A comparable additional investment was made in tooling for the production in 1979 of new and/or improved products. We plan to further substantially increase our expenditure in product research and development in 1979.

Notwithstanding these favourable developments, the devalued Canadian dollar did produce higher costs for us that, in many instances, we could not recover, because of severe competition.

We entered the retail marketing field for the first time in 1978, with the Honeywell smoke detector, and achieved consumer recognition for marketing a premium product. We expect to make a major impact on this market in 1979 with the introduction of a lifetime guarantee on all smoke detectors sold after January 1, 1979.

These factors, however, caused our profitability last year, as a percentage of sales, to be down from the previous year.

Because of the high market acceptance of our products and the increasing need for sophisticated support services, we are faced with undertaking another expansion of office and manufacturing facilities in Metro Toronto. We expect to occupy the expanded facilities in 1981.

## Research and Development

Last fall, the Science Council of Canada made public a report entitled "The Weakest Link". It claimed that the large scale foreign ownership of Canada's manufacturing sector is a weakening influence on the ability of foreign subsidiaries to compete in international markets that are increasingly technologically oriented.

"Foreign ownership", said the Council, "tends to shift the location of research, design, development, marketing and other professional services out of the country, thus narrowing the number and range of job opportunities available in Canada." As well, said the report, "few opportunities are given foreign subsidiaries to contribute to exports."

I have cited these several extracts from the Science Council study not to debate their findings but to clarify some aspects, insofar as Honeywell is a subsidiary of a U.S. company. And also, because we are a significant factor in the Canadian

economy as the leading control systems manufacturer and the second largest computer company. More than a third of our manufacturing in Canada is for export. It is this growing export sales capability which helps to distinguish Honeywell Limited.

Canada's widespread use of electric heat has led Honeywell Canada to develop a line of electric current controllers, which are now marketed throughout North America by our Canadian operations. In 1979, our Scarborough plant will be responsible for supplying the U.S. market with a Canadian-designed thermostat for electric baseboard heating systems.

Other successful Canadian-designed Honeywell products include:

- Automatic Diverting Valves for hot water heating systems. Honeywell Canada is the main supplier to the European market.
- High Voltage Amplifiers for extremely sensitive measuring of high voltage electrical circuits in research and performance testing applications.
- Circuit Breaker Analyzer System to determine the operating characteristics of high power electric circuit breakers; does in half-a-day what would normally take four engineers three days.
- Electronic Security Systems for safes and vaults, designed to meet the needs of the Canadian chartered banks.

In early 1979, we will introduce to both the Canadian and U.S. markets a unique and innovative automatic control system for the modulation of fluorescent lighting systems. This is truly a pioneering breakthrough by our Canadian engineers in the conservation of energy in government and commercial office buildings.

Micro Switch division is working on new models of its highly successful Canadian-produced heavy duty limit switches.

Honeywell Information Systems will also make significant investments in software development in 1979 in association with Carleton University and the University of Waterloo.

In trying to penetrate the U.S. market we did encounter an unexpected setback. The U.S. Treasury Board in January, 1979 imposed a nine per cent countervailing duty on imports to the U.S. of our optic liquid level sensor system. We found this administrative decision most surprising. In 1975, the company received a cash grant from the Canadian Department of Industry, Trade and Commerce to finance 50 per cent of the research and development cost of the OLLS project. The U.S. Treasury Board claimed the grant constituted a manufacturing subsidy, allowing an unfair pricing advantage to Honeywell Limited in the U.S. market. We dispute this conclusion and hope the decision will be nullified because of its ramifications to all Canadian companies using government funding for research and new product development.

## Forecast

It is difficult to forecast the economy for the year ahead. I am optimistic, though, that it will show some improvement. However, the extent will be greatly influenced by events in the U.S. and the outcome of a Canadian election. The country is in dire need of investor and consumer confidence. That will only come with greater political stability and certainty of direction, continuing reduction in the cost of government and, hopefully, a concurrent lessening of taxation pressure on investors and consumers alike.

It may be difficult for us to match the increases we made last year in sales and profits. However, we expect growth to be substantial in 1979, especially in the Information Systems division, which continues to show strong year-to-year improvement. The most significant gains will probably come in the fastest growing segments of the market — mini-computers, terminals and large scale systems.

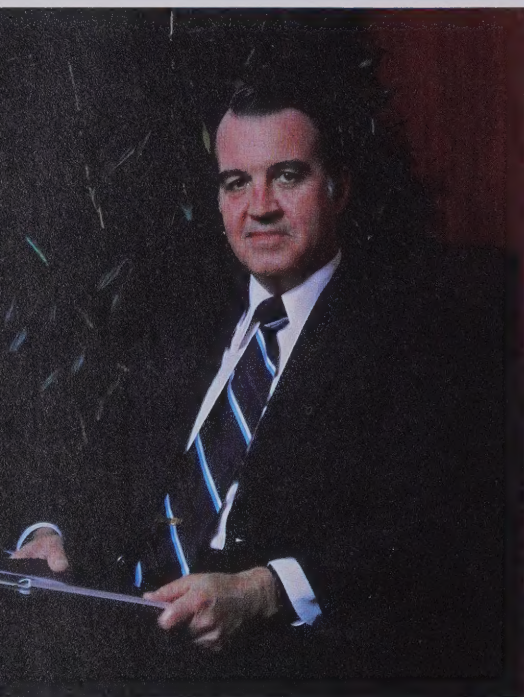
In addition, the high cost of energy will continue to stimulate demand for Honeywell control system products to help conserve energy and reduce other building operating costs.

I believe that the difficult times Canadians have been experiencing will prove to be part of their strength in the future. We have been faced with the necessity of using the resources of this country and adjusting our expectations of standard of living on a much more realistic basis. What Canada needs now, more than anything, is the will and the determination to make the word "Canadian" a symbol to ourselves and the rest of the world of a people genuinely proud of their heritage and justifiably proud of the products of their labour.



CHAIRMAN AND CHIEF EXECUTIVE OFFICER

## Control Systems



J. H. Brace  
President and General Manager,  
Honeywell Control Systems

Honeywell's manufacturing capability in Canada is associated primarily with the five product divisions of the company's Control Systems group: Residential, Commercial, Industrial, MICRO SWITCH and Amplitrol Electronics.

Control Systems is the historic product base of the company. Its dominant role in the Canadian market is in the design, manufacture, installation and servicing of environmental, energy and processing industry related controls. It is also a leading supplier of precision switches, solid state keyboards, scientific instrumentation and guidance and control technology for high performance aircraft.

Control Systems has three plants in Scarborough, totalling 358,000 square feet and employing some 700 skilled personnel. The fifth expansion of the main plant, since it was built in 1957, is underway. A fourth plant of 6,000 square feet is located in Candiac, Quebec, for the operations of the Honeywell Limited subsidiary, Amplitrol Electronics Limited.

Honeywell first began manufacturing in Canada in 1932 and today approximately 35 per cent of all manufacturing by the company in Canada is for the export market. The largest portion of manufacturing done in Canada is accounted for in the company's main Scarborough plant by the high volume product requirements of the Residential division. These products are chiefly associated with heating, cooling and environmental controls for home and commercial applications.

The Industrial Division has two plant operations in the Scarborough area. One, for the final assembly, staging and testing of the microprocessor-based TDC (Total Distributed Control) 2000 industrial processing control system; the other for repair and technical support for all types of medical and scientific instrumentation.

A relatively small but important feature of Honeywell's Canadian manufacturing capability is in the field of avionics. Since 1954, Honeywell Canada has been an approved source by the Department of National

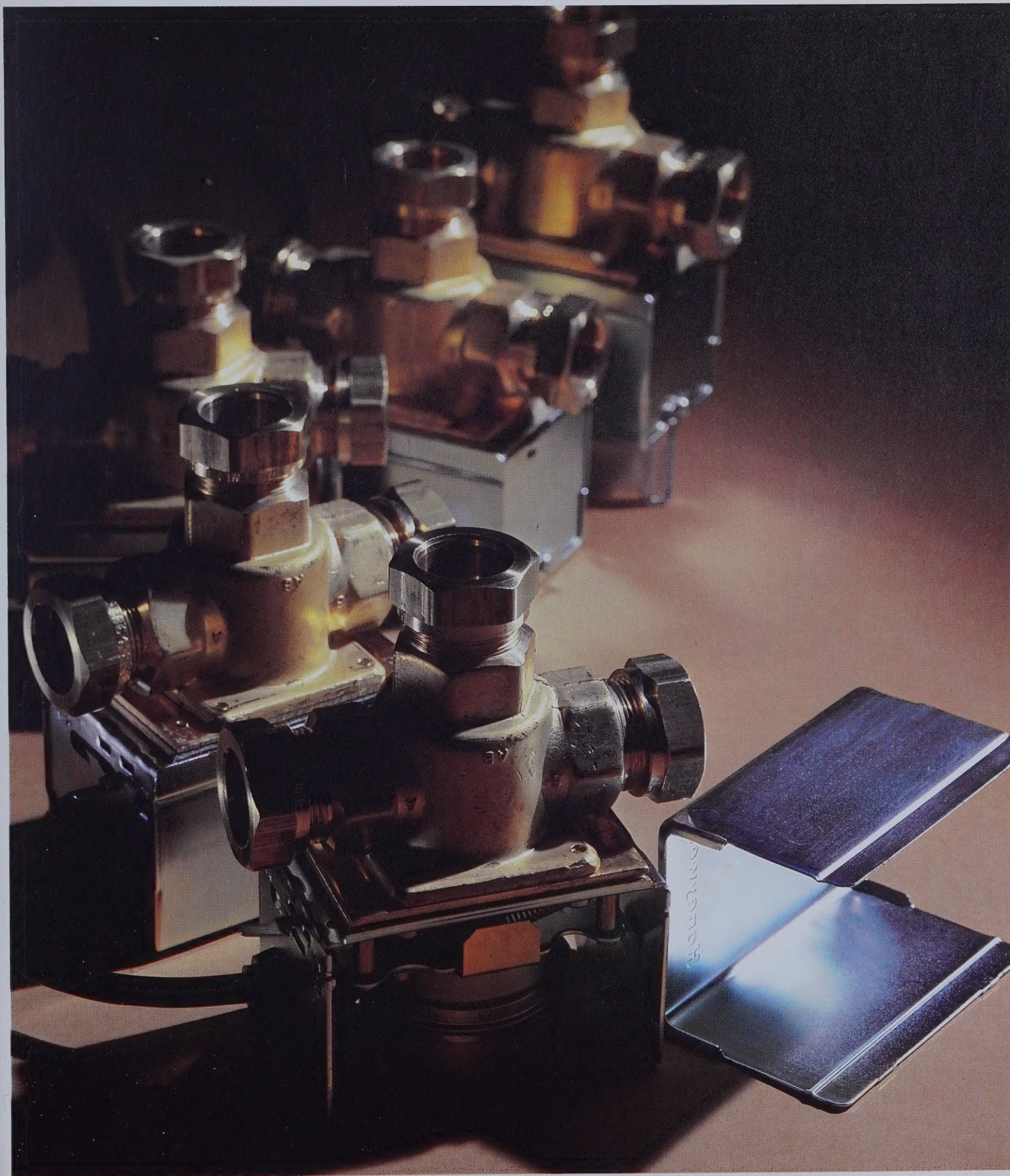
Defence for the manufacture, repair and distribution of avionics equipment.

At Candiac, Quebec, just outside of Montreal, Honeywell Limited subsidiary, Amplitrol Electronics, manufactures Canadian-designed security alarm systems for financial institutions and for commercial, industrial and retail applications.

Honeywell's MICRO SWITCH division is the only manufacturer in Canada of solid state digital keyboards for the computer and related information processing industries. The division also manufactures in the main plant the Canadian-designed optic liquid level sensor system, a device for preventing over-filling of road and rail tank cars, such as those used by the petroleum industry.

Honeywell also maintains in its main Scarborough manufacturing facility its application research and product development group which, in recent years, has researched and developed a number of new products (see "Chairman's Report"). New product developments have not only contributed to enhancing the Canadian company's domestic leadership in control systems, but, because of their cost and quality-effectiveness, have added significantly to the company's export market growth.

**Right:** Zone and diverting hot water valves are one of the leading export products of Honeywell's Residential Division.



## Residential Division

The Residential Division maintained its leadership position in all traditional Canadian markets in 1978, and further expanded its range of products sold in the U.S. and European markets. However, while the devalued Canadian dollar gave Canadian-made products a competitive advantage in world markets, it added significantly to the cost of imported goods.

The division today is at the forefront of a dramatic conversion that is taking place in Canadian industry, from an emphasis on comfort-oriented controls to energy-efficient systems which can provide an assured return on investment. The division successfully launched a continuing "energy management" seminar program in 1978 for contractors, highlighting the return on investment concept. As a result, a growing proportion of the Residential Division's sales are developing in the light commercial building market, rather than the traditional residential housing area. This has served to maintain the division's strong growth trend in the face of reduced home construction in Canada in the past two years.

The Residential Division now divides into several distinct market areas, the largest is the "standard market", which includes such products as gas, oil and electric heating controls, limit and humidity controls. In this market, sales to original equipment manufacturers (OEM) account for about two-thirds of the total. New residential building is the major stimulus to product sales growth. Housing starts in 1979 are expected to remain level in Canada at about 225,000 units. Next, is the "commercial market". Products include flame safeguard systems, commercial heating and ventilating controls and line voltage thermostats.

The "promotional market" includes such products as electronic air cleaners, low voltage thermostats, air conditioning controls and smoke detectors.

Sales of those products associated with energy-saving have been

growing strongly as the small businessman or small plant owner takes advantage of these relatively low cost devices to reduce energy consumption. With such new environmental products as its industrial electronic air cleaner, introduced in 1978, Honeywell is now well-positioned in the market to meet the need for the removal of pollutants in an ever-increasing range of applications.

The division entered the retail market for the first time in May of last year, with the introduction of its quality smoke detector. In the months that followed to the year-end, the marketing objective of establishing Honeywell as a premium smoke detector supplier in Canada, with national distribution, was achieved. In 1979 Honeywell expects to dramatically impact on the smoke detector market with its lifetime guarantee of performance on its smoke detectors, purchased after January 1, 1979.

In late 1978, the division expanded its retail product line to include the "Winter Watchman" thermostat. This unit is manufactured in the Scarborough plant for both the U.S. and Canadian markets.

Export sales by the division are expected to increase in 1979 when Honeywell in Canada expands the manufacture of electric heat controls for supply to the U.S. market and some additional sales to Australia and Europe. The division will also be exploring other key products for manufacture in Canada to serve both domestic and export markets.

## Commercial Division

Building automation, in association with energy management, continues to be one of the most rapidly growing segments of the Commercial Division's diversified activities.

The concern of building owners, and their architects and engineers, to reduce high energy and operating costs, is stimulating increasing interest in these sophisticated and cost effective building control systems. The division's microprocessor-based Delta systems again lead all other competitors in number of new systems sold in 1978. Delta systems have been installed in many of Canada's most prominent building complexes.

In a growing number of buildings the division's fire, security and card access control systems are also being installed. While these integrated fire and security systems are usually centrally controlled from their own independent operator's terminal, they often utilize the same Delta microprocessor that is used for control of the environmental systems, resulting in a more cost effective system.

A growing trend, which will contribute significantly to the division's business over the next three years, is retrofitting of older buildings with automated energy management systems.

This trend also contributed to the successful start-up in mid-1978 of the division's first Building Operations Service System (BOSS) station to provide monitoring and control of heating, air conditioning and power consuming equipment in our customers' buildings, 24 hours a day, from a Delta automation centre located in our Toronto branch office. A second station will be located in Montreal in 1979.

In the division's traditional business segments, sales of Service and Maintenance contracts continued their strong growth pattern, with a new record high. This was due to increasing customer awareness of the necessity for equipment maintenance, resulting in an additional 200 buildings across Canada that will

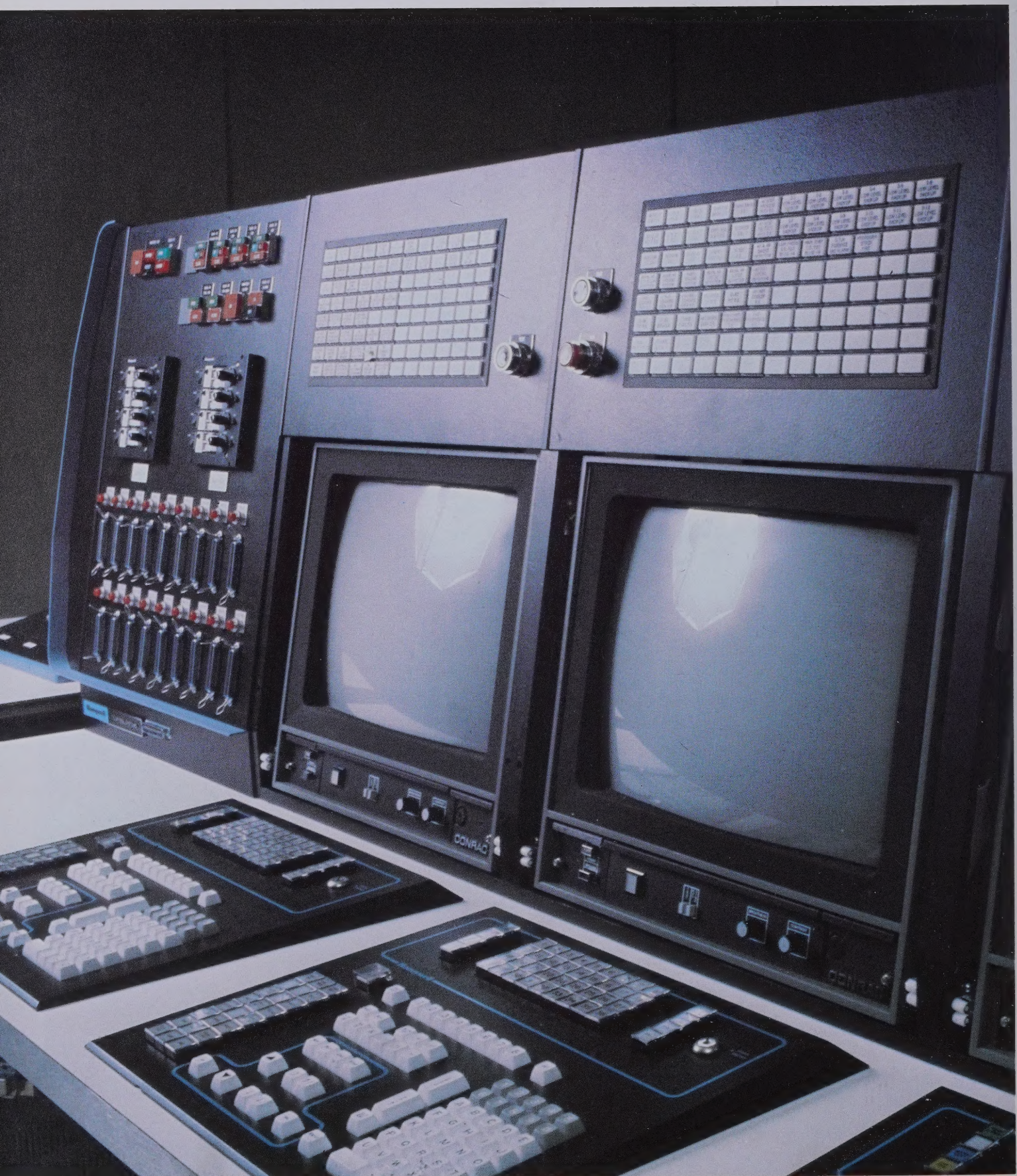
benefit from the division's mechanical maintenance contract service. In spite of another year of little or no growth in new construction in many areas of the country, the sale of heating, ventilating and air conditioning control systems remained strong and showed a small increase over 1977. Emphasis will continue in 1979 on the utilization and sale of more energy efficient systems and a new line of electronic control systems will be introduced before mid-year.

A development of considerable long term significance to the growth and profitability of the division was completion of tests in 1978, preparatory to market introduction in 1979, of the division's Canadian designed "ModuLighting System". ModuLighting is an automated en-

vironmental lighting control system for fluorescent lighting in commercial and institutional buildings. It is capable of controlling light output in an area, at any level between 100 per cent and 20 per cent, with directly corresponding savings in power consumption. This, together with other unique features, provides flexibility in the operation of the lighting system, and can result in lighting energy savings as high as 40 to 50 per cent. The division's Delta system can now control all the building's environmental functions, the fire and security systems — and the lighting system. The system is now being manufactured in the Scarborough factory and will be available in both 347 and 277 volts, the latter primarily for export to the U.S.

**Below:** Honeywell's microprocessor-based Delta 1000 Centralized Building Management Control System.





Honeywell's microprocessor-based Total Distributed Control (TDC) 2000 industrial process control system.

## Industrial Division

The outstanding success of the TDC 2000 process control system made the Industrial Division the star performer in the Control Systems group in 1978. This microprocessor-based system, first introduced to the market a little over two years ago, has, in a relatively short time, clearly established itself as the preferred system in Canada's chemical/petroleum industry, and is rapidly gaining acceptance in other process industries.

Two of Canada's major oil companies are using TDC (Total Distributed Control) 2000 in new refining facilities and in those undergoing extensive modernization. A leading worldwide chemical producer has also placed significant orders for the system, following completion of evaluation of test installations in Canada.

The market for the Honeywell system is especially strong in Western Canada. Significant penetration of the natural gas plant industry has been made, with orders from four major producers. One installation is now in place, the other three are scheduled for 1979. Two TDC 2000 systems have also been ordered for pilot heavy oil extraction plants associated with the huge tar sands projects in Alberta.

In 1978, the first TDC 2000 systems in the Canadian pulp and paper and steel industries went into operation, the latter for a soaking pit application.

In the latter part of the year, the division opened its impressive new Process Systems Centre in the company's Scarborough corporate head office building. This is a comprehensive TDC 2000 facility for demonstrating the system hardware and software. It is also equipped to facilitate original software development by Honeywell or its customers.

The division's Maintenance Sales and Service business component is undergoing major expansion to provide trained manpower to support the growing digital systems business arising from the market penetration of Honeywell's process control systems business. The division is optimistic

that its business will maintain a strong growth rate over the next few years.

In Scientific Products, the division has been experiencing dramatic growth over the past several years. Honeywell has achieved recognition as a highly reputable supplier of test instruments for research and development activity, as well as for the medical markets. The new ACS 1000 blood analyzer, the Canadian-designed circuit breaker test system and the Pulsar 4 defibrillator have been selling in increasing volume. The sales growth rate in 1978 was 32 per cent. Also successfully introduced to the industrial and military research market last year was the new 101 Portable Tape Record/Reproduce System featuring micro-computer control and complete built-in calibration facility.

Last year, the division entered the industrial burner control systems market and has made an impressive penetration. These systems are custom-engineered, designed and built to protect and monitor multi-

burner boiler operations. Further strengthening Honeywell's position in this new market, was the introduction during the year of the DSC 8000 Burner Management Microprocessor for use with large industrial boiler and process heater installations.

## Micro Switch Division

All product lines of the MICRO SWITCH division recorded strong growth in 1978. Keyboard sales were especially vigorous, reflecting the division's high standing as a supplier to the Canadian data processing industry.

With its wide range of precision switches, the division is the specified equipment supplier for the De Havilland "Dash 7" short take-off and landing (STOL) aircraft, and for Canadair's newest jet aircraft, the "Challenger Executive". The division's equipment has also been specified for the subway cars currently being built for the city of Boston by Canadian Car & Foundry.

One of the most notable developments by the division continues to be



Honeywell's avionics component repairs and calibrates automatic flight control systems.

Initial stage in production of Honeywell's Optic Liquid Level Sensor (OLLS) is the assembly of prism and prism carrier.



the Canadian-designed optic liquid level sensor system, on which manufacturing was initiated in 1976 in the company's Scarborough plant for both domestic and export markets. The system was originally designed as an over-fill sensor device for safe loading of petroleum-carrying road tank cars. In 1978 an adaptation was placed on the market for use in rail tank car loading. Currently a major United States high performance aircraft manufacturer has shown strong interest in the system's application to a new generation of

aircraft underway.

The system has received particularly widespread acceptance throughout the overfill protection market in Western Canada. It is one of two systems approved by the Ontario government. In the United States, four of the major oil companies are concluding field tests of the system, with acceptance of the Honeywell system as the industry standard anticipated in the near future.

There are good prospects that the division will gain European govern-

ment approvals for the system in 1979. In Japan a modified prototype of the optic liquid level sensor will also be under test in the year ahead. The division is also looking at the development of additional modified prototypes of the system for a wide range of other applications.

The division's sales forecasts for 1979 show continuing market strength in all product areas.

Toronto monitoring station of Amplitrol Electronics: 24-hour security for 800 corporate clients.



## Amplitrol Electronics

For the past five years, Amplitrol, a subsidiary of Honeywell, has experienced a vigorous growth pattern as financial institutions, its major customers, have engaged in retrofit programs to upgrade bank vault alarm systems.

It is anticipated that this momentum will decline in 1979 as upgrades in over 70 per cent of the branches of the major chartered bank are now completed. The introduction of a new vault sensor package, which includes

a new high security door switch, ionization detection and vibration detection, will, however, provide a further upgrading opportunity for security systems to the Canadian chartered banks.

At the same time, Amplitrol looks to new growth opportunities in the retail, commercial and industrial markets in which it has made substantial penetration over the past 12 months. Equipment rental represents a large portion of total sales revenue in these markets.

In 1979, Amplitrol also expects to broaden its export base by commencing major deliveries of bank security equipment to France, adding to its already established export business in the Scandinavian countries.



R. J. Ball,  
Vice President and General Manager,  
Honeywell Information Systems

Information Systems is the largest of Honeywell's product line divisions. Its research and development in advanced integrated circuit technology has influenced the course of product development in all other divisions of the company. Today, there is not a single division of Honeywell that is not using integrated circuits in at least one of its product lines.

Honeywell entered the computer field in Canada in 1958, two years after initial entry by the parent company into the U.S. market. With the impetus to growth of the acquisition of General Electric's large-scale computer product line and customer base in 1970, Honeywell has moved to the forefront in the nearly \$3 billion Canadian information processing market. It is now the second ranking general purpose computer company in Canada in terms of the dollar value of its total installed customer base.

In 1974, Honeywell introduced its Series 60 computer product line, establishing the company in a highly competitive position in the general purpose computer field. Systems range from the Level 6 minicomputer family, to the small scale business computer, the Level 62, and the medium scale Level 64, to the large scale Level 66 and Level 68 systems.

The company has consistently followed a policy of bridging its acquired customers into the Series 60 systems. This has included the G.E. customer base and the large-scale computer customer base of Xerox, acquired in 1976.

Honeywell is today the only computer manufacturing company in the market which has designed, produced, sold and installed both general-purpose and minicomputer systems for well over a decade. As a result, Honeywell is in the forefront to meet the growing trend to distributed processing power and establishment of data bases on two or more interacting processors.

Honeywell's expertise in minicomputers has also contributed to the development of electrographic technology, which is reflected in the company's Page Printing System. Compatible with other major manufacturers' host computers,

Honeywell's Page Printing System has set new standards for large volume output printing.

The Information Systems division in Canada benefits from the long-range policy of the parent Honeywell organization to acquire companies serving highly specialized computer-related markets, as part of its on-going commitment to enhance Honeywell's leadership capability in the computer industry.

Honeywell has successfully built a customer base in Canada that embraces most levels of government and many of Canada's leading businesses in such diverse fields as banking, food processing and distribution, publishing, utilities, air transportation, and automobile manufacturing. Some 80 per cent of Honeywell's computer work force in Canada is dedicated to providing customer support services, including marketing, systems engineering, education, software programming and field engineering. The division maintains 14 branch sales offices, from Vancouver Island to Newfoundland, and provides field engineering staff in 27 cities across Canada to ensure efficient installation and maintenance of Honeywell customers' equipment.

As computer hardware costs continue to decline with the development of assembly line production techniques, Honeywell stresses people-related services in its approach to the market. Honeywell forecasts that customers will soon be spending more of their computer dollar on high technology, labour intensive services, especially software development, than on hardware.

Consistent with this, Honeywell Information Systems has established a software development group in Canada, in addition to working closely with the computer research facilities of the University of Waterloo and Carleton University, both in Ontario. These institutions have made major contributions to establishing Canada's computer industry in the forefront of software development — a mission well-suited to the communication needs of Canada's far-flung geography.



The Level 68/DPS MULTICS system provides unmatched capabilities for productivity, administrative control, investment protection, networking and security.

## H.I.S. Operations

In 1978, Honeywell's Information Systems division continued to expand with strength in the market place. Net bookings increased from the previous year, and contribution to consolidated earnings was at a significant high.

The year under review saw the introduction of the Level 68/DPS: MULTICS (Multiplexed Information and Computing Service). With this system Honeywell has again taken the lead in providing for management of today's critical functions: productivity, administrative control, investment protection, networking, and security.

MULTICS is proving remarkably successful and is certain to set design and operational standards for years to come. It offers capabilities and tools not available in other systems, as well as superiority in configurability, functionality, and ease of use. According to a security study by Mitre Corps., commissioned by the U.S. Air Force, the MULTICS architecture is unmatched in the industry and is superior to its nearest competitor by a ratio of 2 to 1.

The first Canadian customer to join the MULTICS international community of users was the University of Calgary. Collin Marx, Director of Computer Services for the University said: "MULTICS is where the industry is headed . . . we think the Level 68/DPS reflects the design requirements of the 1980s."

Near year-end, Bell Canada lent support to the University's assessment by approving the acquisition of two MULTICS processors.

In 1978, Information Systems expanded and greatly increased the flexibility of its Level 6 product line. Four new minicomputer systems were introduced to the Canadian market, comprising a family of minicomputers that can be "mixed and matched" freely within the line without affecting the user's application. From the Model 23, selling under \$20,000 a system, to the Model 57 selling at over \$150,000, Information Systems now offers services unequalled by any competitor.

With Level 6, the customer's requirements — not the given hardware implementation of a vendor — decide the kind of system to purchase. Only Honeywell can offer this in minicomputers: a system that can grow as the organization grows; no costly hardware changeovers; no reprogramming or conversions; and no retraining.

As a result, Level 6 systems have been widely received in Canada, with sales expected to grow significantly in the year ahead.

Early in 1978, Honeywell Inc. Minneapolis, acquired Incoterm Corp., of Wellesley Hills, Ma., a leading computer terminal manufacturer. The acquisition included the Toronto-based Canadian subsidiary, Incoterm Computers and Terminals Limited, which became a division of Information Systems in January, 1979.

Incoterm was awarded a \$7 million contract for banking terminal equipment from the Provincial Bank. The contract involves the supply of over one thousand Series 7000 Financial Terminals and the implementation of a full SDLC/SNA network in their more than 350 Canadian branches.

A second large scale computer system was introduced during 1978 for the recently acquired base of Xerox users. The new system will provide the Control Program-5 (CP-5) customers with a compatible growth path into the Honeywell Level 66 product line. The Level 66/DPS/C Series, based on Level 66 technology and packaged uniquely for the CP-6 operating system, provides this next generation upgrade for the CP-5 user.

Three systems were sold in 1978. One to Carleton University and two to the University of Toronto Library Automation Systems.

Honeywell and Carleton University, which has an outstanding reputation in the computer field, have entered an agreement to extend the CP-6 software offering. The agreement calls for Carleton University to make available, under CP-6, an extensive library of special purpose application packages which include those now

available under the CP-5 operating system.

In addition, Honeywell has arranged for the University of Waterloo, recognized as one of the outstanding computer research resources in North America, to provide enhancements to the General Comprehensive Operating System (GCOS) software for the Level 66.

Information Systems division moves into 1979 with an excellent backlog of bookings. In the minicomputer and terminal systems markets major growth of over 60 per cent is anticipated, and in large scale systems the forecasted growth factor is over 30 per cent.



**Top:** Desk-style office package, one of a broad range of options available in the Honeywell Level 6 minicomputer modular system.

**Left:** Incoterm, a leading full-line computer terminal manufacturer, was acquired by Honeywell Information Systems in 1978.

**Right:** Multi image concept of Honeywell's High-Speed Non-Impact Printer. The Page Printing System prints 18,000 lines per minute.



## Facilities

MANUFACTURING	(000 Sq. ft.)
Scarborough Plant No. 1 . . . . .	316
Scarborough Plant No. 2 . . . . .	10
Rolark Plant . . . . .	32
Candiac, Quebec Plant . . . . .	6
Warehouse/Parts Depot (Information Systems) . . . . .	51
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### BRANCH SALES OFFICES

Control Systems (18) . . . . .	130
Information Systems (14) . . . . .	99
Amplitrol (10) . . . . .	12
	<hr/> 241

### EXECUTIVE OFFICES

Corporate (Scarborough) . . . . .	77
Information Systems (Heron's Hill) . . . . .	32
Amplitrol Electronics (Candiac, Que.) . . . . .	6
	<hr/> 115

GRAND TOTAL . . . . . 771

### EMPLOYEES (average)

Control Systems . . . . .	2,322
Information Systems . . . . .	752
	<hr/> 3,074

## Offices Across Canada

### HEAD OFFICE

Honeywell Limited  
740 Ellesmere Road,  
Scarborough, Ontario  
M1P 2V9  
(416) 293-8111  
Telex 065-25170

### HONEYWELL CONTROL SYSTEMS

#### *Manufacturing Facilities (5)*

Honeywell Limited — Control  
Systems  
740 Ellesmere Road  
Scarborough, Ontario

#### *Branch Offices (18)*

British Columbia — Vancouver  
Alberta — Calgary, Edmonton  
Saskatchewan — Regina, Saskatoon  
Manitoba — Winnipeg  
Ontario — Windsor, London,  
Hamilton  
Sudbury, Toronto, Ottawa  
Québec — Montréal, Québec City,  
Sherbrooke

New Brunswick — Moncton  
Nova Scotia — Halifax  
Newfoundland — St. John's

### HONEYWELL INFORMATION SYSTEMS

#### *Executive Offices*

Honeywell Information Systems  
2025 Sheppard Avenue East,  
Willowdale, Ontario M2J 1W5  
(416) 491-0660  
Telex 06-966807

#### *Branch Offices (14)*

British Columbia — Victoria  
Vancouver  
Alberta — Calgary, Edmonton  
Manitoba — Winnipeg  
Ontario — London, Waterloo,  
Burlington, Sudbury  
Toronto, Ottawa  
Québec — Montréal, Québec City,  
Nova Scotia — Halifax

## Board of Directors

RODRIGUE J. BILODEAU  
Chairman and Chief Executive Officer,  
Honeywell Limited

JOHN H. BRACE  
President, Honeywell Limited,  
and General Manager,  
Honeywell Control Systems

RICHARD J. BALL  
Vice President, Honeywell Limited,  
and General Manager  
Honeywell Information Systems

W. HAROLD EVANS  
Former Chairman (retired),  
Honeywell Limited

THOMAS A. REED  
Group Vice President  
International Operations,  
Honeywell Inc.

PATRICK J. SUDDICK  
Vice President, Corporate Field  
Marketing,  
Honeywell Limited

## Corporate Officers

RODRIGUE J. BILODEAU  
Chairman,  
and Chief Executive Officer

JOHN H. BRACE  
President,  
and General Manager,  
Honeywell Control Systems

RICHARD J. BALL  
Vice President,  
and General Manager,  
Honeywell Information Systems

GERALD H. SEDGLEY  
Vice President, Marketing,  
Honeywell Control Systems

PATRICK J. SUDDICK  
Vice President,  
Corporate Field Marketing

ERIC N. FISHER  
Treasurer

TERRANCE A. J. GOUDIE  
Secretary and General Counsel

## Senior Management

Rodrigue J. Bilodeau,  
Chairman and Chief Executive Officer

John H. Brace,  
President, Honeywell Limited,  
and General Manager,  
Honeywell Control Systems

Richard J. Ball,  
Vice President, Honeywell Limited,  
and General Manager  
Honeywell Information Systems

Patrick J. Suddick,  
Vice President,  
Corporate Field Marketing

Gerald H. Sedgley,  
Vice President, Marketing, C.S.

Keith A. Coulter,  
Director, Management Information  
Systems

Max C. Coutts,  
Director, Facilities Planning

Warren R. Douglas,  
Corporate Manager,  
Field Administration

Eric N. Fisher, Treasurer, Corporate

Terrance A. J. Goudie, Corporate Secretary

Douglas C. Montrose,  
Corporate Director, Employee Relations

H. David Warren,  
Director, Planning & Business  
Development

Bruce J. Barry,  
Manager, MICRO SWITCH Division, C.S.

Gordon E. Howey,  
Controller, C.S.

Brian M. McGourty,  
Vice President, and General  
Manager,  
Amplitrol Electronics

R. James Raycroft,  
Manager, Industrial Division, C.S.

Ronald E. Sprague,  
Manager, Commercial Division, C.S.

William G. White,  
Manager, Residential Division, C.S.

Lee J. Caldwell,  
Controller, I.S.

William S. Dinnie,  
Director, Marketing Operations, I.S.

G. John Maas,  
Director, Field Operations, I.S.

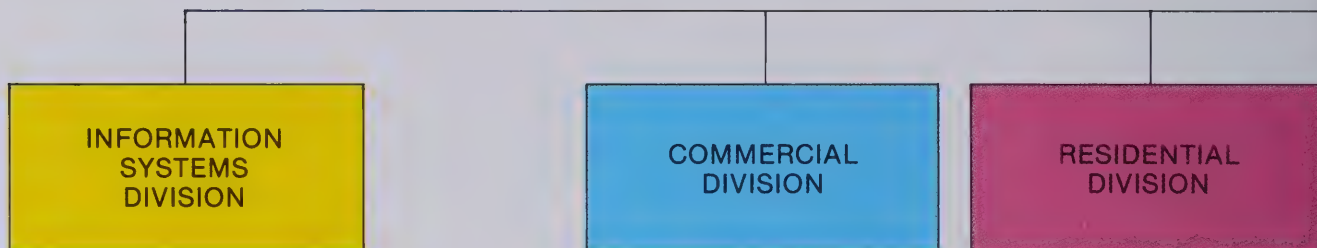
Nelson K. Patterson,  
Director, Product Development, I.S.

J. Boyd Simpson,  
Legal Counsel, I.S.

Michael Wilson,  
Director, Employee Relations, I.S.

Donald J. Wood,  
Assistant to Vice President  
and General Manager, I.S.

# Products and Services



## Hardware

- General purpose small, medium and large Digital Computer Systems for information processing in business, education, scientific, timesharing for institutional environments
- Minicomputer Systems for original equipment manufacturers, end users, distributed systems, data collections and communications networks

## Peripheral Equipment

- Tape Drives
- Disc Drives
- Printers
- Card Readers and Punches
- Paper Tape Readers and Punches
- Cassette and Diskette Units
- Terminals: Displays and Inquiry Stations
- Data Entry Station
- Character Recognition Devices
- Non-impact, ultra-high speed Page Printers
- Applications Terminals

## Software

- Operating Systems
- Compilers
- Instructional Languages
- Conversational Languages
- Sorts and Utilities
- Applications Software and Libraries for Business and Science
- Data Base Systems
- Transaction Driven Systems
- Time Sharing Systems

## Supplies

- Disk Packs
- Tapes
- Printer Ribbon Cassettes
- Diskettes
- Publications

## Services

- Programming
- Conversions
- Education
- Systems Analysis
- Seminars
- Maintenance Service

- Computerized Building Control Systems for supervision and operation of mechanical and electrical systems in buildings
- Computerized Energy Management Systems for commercial, institutional and industrial buildings
- Fire Security Detection Systems, local and proprietary
- Fire Management Systems
- Pneumatic, Electric and Electronic Control Systems for heating, ventilating, refrigeration and air conditioning
- Systems Application Engineering and Installation
- Control Systems Service and Maintenance
- Mechanical Systems Maintenance
- Building Operation Service Systems (BOSS)

- Energy Management Controls
- Thermostats and Protection Controls for oil, gas, and electric furnaces
- Clock Thermostats
- Line Voltage Thermostats
- Electronic Air Cleaners for home and industry
- Flame Safeguard Controls
- Electric and Electronic Controls for heating, ventilating, refrigeration, and air conditioning applications
- Dampers
- Hydronic Zone Valves
- Contactors and Relays
- Appliance Controls
- Humidity Controls
- Smoke Detectors
- Load Management Controls

## CORPORATE MANAGEMENT

### MICRO SWITCH DIVISION

### AMPLITROL ELECTRONICS

### INDUSTRIAL DIVISION

- Precision Snap-action Switches
- Limit Switches
- Explosion Proof and Splash Proof industrial switches
- Mercury Switches
- Proximity Switches
- Rotary Selector and Toggle Switches
- Manual Switches and Lighted Indicators and Controls
- Interlock Switches
- Solid State Switches
- Keyboards — assembled, wired and encoded
- Servomotors
- Optic Liquid Level Sensors
- Pressure Transducers
- Photoelectric Controls

#### Electronic Security Systems

- Vault-safe and Hold-up Alarm Systems for Financial Institutions
- Telephone Line Security
- Security Monitoring Services
- Alarm Systems for commercial, industrial and retail applications

#### Process Controls

- Industrial Process Control Centers and Panels
- Industrial Indicating, Recording and Control Instruments
  - Electrical
  - Electronic
  - Pneumatic
- Industrial Control Valves
  - Pneumatic
  - Electric
  - Manual
- Instrumentation Systems for process and manufacturing industries
- Advanced Automation for industrial applications
  - Problem solving involving Analog or Digital Techniques, Special Sensors
  - Advanced Control Studies
- Sensors
  - Temperature
  - Pressure
  - Flow
- Process Analyzers
- Maintenance Services for Instrument Users
- Instrument Installation and Start Up Services
- Special Industrial Sensors
- Controls for Machine Tools
- Industrial Multiburner Flame Safeguard Systems
- Burner Control Systems

#### Scientific Products

- Analog High Speed Data Acquisition Systems for:
  - Data Measuring
  - Data Recording
  - Data Reduction
  - Data Playback
  - Data Readout
- Signal Analysis
  - Correlation
  - Fourier Transform
  - Histogram
- Physiological Monitoring Systems
- Clinical Instrumentation
- Electronic Test and Measurement Instruments
- Amplifiers and Monitor Oscilloscopes
- Recording Instruments
  - Magnetic Tape
  - Oscillographs
  - Recording Oscilloscopes
  - Signal Conditioning

#### Military Products

- Military & Commercial Avionics
  - Flight Control Systems
  - Radar Altimeters
  - Air Data Computers
  - Fuel Management Systems
- Communications Systems
  - High Speed Data Transmitting Devices
- Test Equipment
  - Computerized Automatic Test Systems
- Repair and Field Service
  - Flight Control Systems
  - Gyros and Gyro Packages
  - Test Equipment

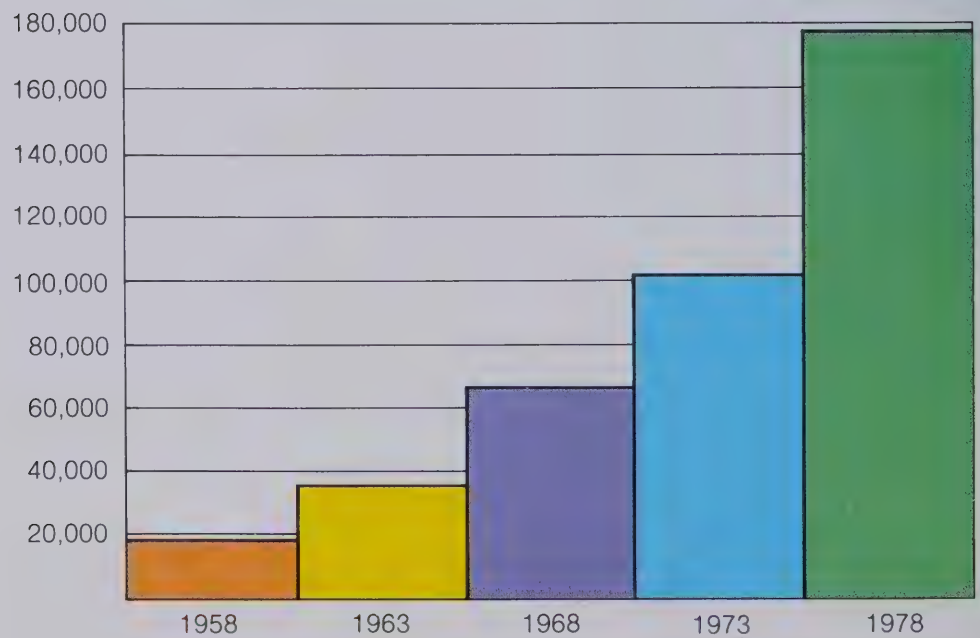
## The Year in Review

	(\$ ,000)
	1978
Gross Revenue	178,158
Net Earnings (before dividend)	11,806
Total Assets (net)	136,708
Property, Plant & Equipment (net)	31,093
Number of Employees (average)	3,074

### How the 1978 Sales Dollar Divided:

	(\$ ,000)	
Employee costs, including wages, salaries and benefits	59,714	33.5%
Cost of materials and services purchased from suppliers	79,516	44.6%
Replacement of plant and equipment	10,786	6.1%
Taxes paid to federal, provincial and local governments	16,904	9.5%
Interest expense	( 568)	( .3%)
Dividends	—	—%
Retained earnings invested in business assets such as new equipment, inventory, etc.	11,806	6.6%
Gross revenue for 1978 from sales, rentals, services	178,158	100.0%

### Sales Revenue Growth (dollars)



# Consolidated Statement of Income and Retained Earnings

FOR THE YEARS ENDED DECEMBER 31, 1978 AND 1977

(in thousands of dollars)

	1978	1977
GROSS REVENUE .....	\$178,158	\$156,348
COST OF GOODS SOLD AND OTHER EXPENSES (including depreciation of \$10,786; 1977 - \$10,746) .....	158,783	137,554
INCOME BEFORE INCOME TAXES .....	19,375	18,794
PROVISION FOR INCOME TAXES .....	7,569	8,190
NET INCOME FOR THE YEAR .....	11,806	10,604
RETAINED EARNINGS AT BEGINNING OF THE YEAR .....	55,218	45,828
	67,024	56,432
DIVIDENDS PAID .....	—	1,214
RETAINED EARNINGS AT END OF THE YEAR .....	\$ 67,024	\$ 55,218

# Consolidated Balance Sheet as at December 31, 1978 and 1977

(A Private Company under the Canada Business Corporation Act)

Assets	1978	1977
<b>CURRENT ASSETS:</b>	(in thousands of dollars)	
Cash and time deposits .....	\$ 106	\$ 14,825
Receivables:		
Trade accounts .....	39,379	32,270
Affiliated companies .....	3,017	1,989
Employees and other .....	1,305	1,119
Inventories .....	26,408	22,043
Income taxes recoverable .....	—	1,714
Prepaid expenses .....	368	200
Total current assets .....	70,583	74,160
LONG-TERM RECEIVABLES — rental and sales contracts .....	32,891	22,656
PROPERTY — at cost .....	76,457	77,630
Less accumulated depreciation .....	45,364	46,812
Net property .....	31,093	30,818
DEFERRED INCOME TAXES .....	1,077	—
GOODWILL — at cost less accumulated amortization .....	1,064	1,094
<b>TOTAL .....</b>	<b>\$136,708</b>	<b>\$128,728</b>

## Liabilities and Shareholders' Equity

1978 1977

### CURRENT LIABILITIES:

(in thousands of dollars)

Bank loans payable on demand .....	\$ 3,022	\$ 2,328
Short-term notes payable .....	22,100	38,535
Payables:		
Trade .....	3,973	2,876
Affiliated companies .....	6,447	4,869
Accrued charges .....	11,419	8,449
Income taxes payable .....	9,599	—
Deferred income .....	1,784	1,624
Total current liabilities .....	58,344	58,681

OTHER LIABILITIES .....	1,199	1,357
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DEFERRED INCOME TAXES .....	—	3,331
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### SHAREHOLDERS' EQUITY:

Share capital:		
Authorized — 250,000 common shares of no par value		
Issued — 202,820 common shares .....	10,141	10,141
Retained earnings .....	67,024	55,218
Total shareholders' equity .....	77,165	65,359

TOTAL .....	\$136,708	\$128,728
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